

ABSTRACT OF THE DISCLOSURE

A system and method for continuous online safety and reliability monitoring is disclosed. The method includes the steps of obtaining operating information about at
5 least one of a plurality of instrumented function components, which are part of an instrumented function, and determining a probability of failure on demand for the instrumented function based on the operating information. In variations, instantaneous probability of failure on demand, online mean time to failure (MTTF), and online safety integrity level (SIL) are also calculated for an instrumented function.
10 In other variations of the invention, alarms are reported to an operator based on the variance indicating the probability of failure on demand for the instrumented function is too high. In yet further variations, the system allows a user to predict probability of failure on demand values into the future based on hypothetical and/or future planned test times.

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